

In the Claims:

Claims 1 to 10 (Canceled).

1 **11.** (Previously presented) A sensor transponder (1) with a
2 facility for transmitting measurement data from a tire (9)
3 to a receiving facility and at least one acceleration
4 sensor, characterized in that the sensor transponder (1) is
5 fitted on an inner side of the running surface (2) of the
6 tire (9).

1 **12.** (Previously presented) The sensor transponder (1) according
2 to claim 11, characterized in that as a receiving facility,
3 a receiving antenna is fitted, which is preferably arranged
4 in a vehicle.

1 **13.** (Previously presented) The sensor transponder (1) according
2 to claim 12, characterized in that the receiving antenna is
3 also designed as a transmitting antenna.

1 **14.** (Previously presented) The sensor transponder (1) according
2 to claim 11, characterized in that the sensor transponder
3 (1) comprises a memory for tire-specific parameters.

1 **15.** (Previously presented) The sensor transponder (1) according
2 to claim 11, characterized in that the sensor transponder
3 (1) comprises at least one pressure sensor.

1 **16.** (Previously presented) The sensor transponder (1) according
2 to claim 11, characterized in that the sensor transponder
3 (1) comprises at least one temperature sensor.

1 **17.** (Previously presented) The sensor transponder (1) according
2 to claim 11, characterized in that a central unit is fitted
3 and the evaluation of the signals from the sensor
4 transponder (1) is conducted in the central unit.

1 **18.** (Previously presented) A procedure for calculating a tire
2 contact length (6), whereby a sensor transponder (1) is
3 fitted with at least one acceleration sensor arranged on
4 the inner side of a running surface (2) of a tire (9), the
5 signals from the acceleration sensor are compared with
6 threshold values and are then integrated, and the tire
7 contact length (6) is calculated independently of the
8 velocity using quotient formation.

1 **19.** (Previously presented) The procedure according to claim 18,
2 characterized in that the tire contact area (tread) is
3 calculated from the tire contact length (6) using
4 tire-specific parameters.

1 **20.** (Previously presented) The procedure according to claim 19,
2 characterized in that the wheel load is calculated using
3 the tire contact area and the tire pressure.

1 **21.** (New) An apparatus for acquiring measured data from a tire
2 of a vehicle, comprising:

3 a receiver arrangement;

4 a transponder that is adapted to transmit measured
5 data comprising acceleration data to said receiver
6 arrangement; and

7 an acceleration sensor that is mounted on an inner
8 side of a running surface of the tire of the vehicle and
9 that is arranged and adapted to measure and provide the
10 acceleration data to said transponder.

1 **22.** (New) The apparatus according to claim 21, wherein said
2 transponder is mounted on the inner side of the running
3 surface of the tire, and wherein said transponder and said
4 acceleration sensor are combined together to form a sensor
5 transponder unit.

1 **23.** (New) The apparatus according to claim 22, wherein said
2 sensor transponder unit further comprises a memory that
3 stores tire-specific parameters characterizing the tire and
4 that is connected to said transponder.

1 **24.** (New) The apparatus according to claim 22, wherein said
2 sensor transponder unit further comprises a pressure sensor
3 that is arranged and adapted to measure an air pressure in
4 the tire and to provide corresponding pressure data as part
5 of said measured data to said transponder.

1 **25.** (New) The apparatus according to claim 22, wherein said
2 sensor transponder unit further comprises a temperature
3 sensor that is arranged and adapted to measure a
4 temperature in the tire and to provide corresponding
5 temperature data as part of said measured data to said
6 transponder.

1 **26.** (New) The apparatus according to claim 21, wherein said
2 receiver arrangement comprises a receiving antenna arranged
3 in the vehicle.

1 **27.** (New) The apparatus according to claim 26, further
2 comprising a transmitter arrangement connected to said
3 receiving antenna which is further designed and adapted as
4 a transmitting antenna.

1 **28.** (New) The apparatus according to claim 21, further
2 comprising a central unit that comprises an evaluation unit
3 arranged in the vehicle and connected to said receiver
4 arrangement, wherein said evaluation unit is adapted to
5 evaluate and process the measured data.

1 **29.** (New) The apparatus according to claim 28, wherein said
2 evaluation unit comprises a comparator and an integrator,
3 wherein said comparator has an input connected to said
4 receiver arrangement so as to receive the measured data and
5 has an output connected to said integrator.

1 **30.** (New) The apparatus according to claim 21, wherein said
2 acceleration sensor comprises a DC-compatible acceleration
3 sensor with low pass behavior.

1 **31.** (New) The apparatus according to claim 21, wherein said
2 acceleration sensor comprises a non-DC-compatible
3 acceleration sensor with differentiating behavior.

1 **32.** (New) A method of using the apparatus according to claim 29
2 to calculate at least a tire contact length of the tire of
3 the vehicle, comprising the steps:

- 4 a) as the tire rotates, measuring said acceleration data
5 of the tire using said acceleration sensor;
- 6 b) using said transponder transmitting said measured data
7 comprising said acceleration data to said receiver
8 arrangement, and providing said measured data from
9 said receiver arrangement to said central unit;
- 10 c) in said evaluation unit evaluating said acceleration
11 data to determine therefrom a first result dependent
12 on a duration of said acceleration sensor passing
13 through said tire contact length during one rotation
14 of the tire and a second result indicative of a
15 duration of said one rotation of the tire, wherein
16 said evaluating comprises comparing said acceleration
17 data to a threshold using said comparator and
18 controlling said integrator with an output signal of
19 said comparator; and

20 d) forming a quotient of said first result relative to
21 said second result to determine said tire contact
22 length relative to a circumference of the tire and
23 independent of a tire rotation speed of the rotation
24 of the tire.

1 **33.** (New) The method according to claim 32, further comprising
2 a step of calculating a tire contact area of the tire from
3 said tire contact length and at least one tire-specific
4 parameter of the tire.

1 **34.** (New) The method according to claim 33, wherein said sensor
2 transponder unit further comprises a pressure sensor that
3 is arranged and adapted to measure an air pressure in the
4 tire and to provide corresponding pressure data as part of
5 said measured data to said transponder, wherein said method
6 further comprises a step of calculating a wheel load of the
7 tire from at least said tire contact area and said pressure
8 data.

[RESPONSE CONTINUES ON NEXT PAGE]